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Drug Point: Acute Psychosis Caused by Co-Amoxiclav

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**Life with common variable immunodeficiency**

I have been regaining weight. When my weight reached 48 kg my periods resumed, and my weight now seems to have stabilised at 51 kg. Over time my stomach has settled, but I still have flare-ups. I have supplies of antibiotics for such flare-ups and for infections elsewhere.

My condition has affected the entire family. Not only has my husband had to become the sole breadwinner, but everyone else has to deal with my stomach problems and adjust to never having privacy in the bathroom—I am liable to rush in without warning. I still get tired and find that if I rush about subjecting myself to the normal stresses and strains of daily life I can become run down and begin to feel nauseous and dizzy, and my stomach will often flare up the next day.

As common variable immunodeficiency is a genetic condition, there was concern over my son. Tests showed his immune system to be healthy, but whether he could develop the condition later in life is not known. Specialists believe that common variable immunodeficiency can also skip generations, so the condition is not only a consideration for my son but also for his children,

my sister, and her children. My mother was advised to have her immune system checked and it is “low”—she is now seeing the same immunologist at King’s College Hospital for further tests.

My general practitioner has had to learn about the condition along with me and has been very understanding. The immunology consultants and nurses and the other specialist consultants at King’s College Hospital have been fantastic. I have been listened to, understood, and referred to other specialist consultants to cover all health concerns. The specialist nurse in particular has had to endure my constant questioning since my transfusions began in July 2007 and is probably looking forward to me doing my home treatment so she can get some peace. I was placed on the same cycle of transfusions as three other people with the condition, which has enabled me to learn about how they have dealt with their conditions and ask yet more questions.

**Competing interests:** None declared.

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**DRUG POINT****Acute psychosis caused by co-amoxiclav**

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Co-amoxiclav is a fixed dose combination of amoxicillin and clavulanate that offers antibacterial activity against some strains that produce  $\beta$  lactamase. Recognised adverse effects include exfoliative dermatitis, deranged liver biochemistry, and anaphylaxis.<sup>1</sup> We report the occurrence of acute psychosis after giving co-amoxiclav, with a strong temporal relationship and recurrence after drug rechallenge.

**Case report**

A 55 year old woman was prescribed oral co-amoxiclav for suspected pneumonia. Within two hours of receiving 375 mg she became disorientated and confused and seemed unable to hear her husband. On arrival in the emergency department the symptoms had resolved, and physical examination was normal. Later the same day she received a further dose of 750 mg co-amoxiclav, and about 90 minutes later her behaviour became increasingly agitated and bizarre, and she experienced visual hallucinations, persecutory delusions, and disordered speech. Chest radiograph, cranial computed tomography, serum electrolytes, and cerebrospinal fluid microscopy were normal. Urinary toxicological screening was negative, and there was no laboratory evidence of infection or inflammatory response. She was treated initially with oral haloperidol and intravenous midazolam, and her symptoms resolved promptly and did not recur in the next 24 hours.

Psychiatric assessment found no underlying disorder, and a diagnosis of drug induced psychosis was made. Hospital case notes showed that she had previously had hallucinations after a single intravenous dose of co-amoxiclav for surgical prophylaxis.

Co-amoxiclav has been reported to cause behavioural disturbance in children.<sup>2</sup> The yellow card scheme has received 3935 reports of adverse reactions to co-amoxiclav (to 30 September 2007), including psychiatric effects in 102 (2.6%).<sup>3</sup> A broadly similar proportion of psychiatric adverse effects has been reported after amoxicillin, indicating that this component might be responsible. Symptoms coincided with the expected peak circulating drug concentrations at about one hour.<sup>1</sup> We are reminded to consider the possibility of drug induced acute psychosis, even in the absence of pre-existing psychiatric illness or other predisposing factors.

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- 1 Sweetman SC, ed. *Martindale: the complete drug reference*. 35th ed. London: Pharmaceutical Press, 2007.
- 2 Macknin ML. Behavioral changes after amoxicillin-clavulanate. *Pediatr Infect Dis J* 1987;6:873-4.
- 3 Medicines and Healthcare Products Regulatory Agency. Drug analysis prints: data on suspected adverse drug reactions. [www.mhra.gov.uk/Onlineservices/Medicines/Druganalysisprints/index.htm](http://www.mhra.gov.uk/Onlineservices/Medicines/Druganalysisprints/index.htm).